

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method for increasing channel diversity in a mobile communications device ~~wirelessly transmitting data between a base transceiver station and a subscriber unit, the base transceiver station comprising a plurality of transmit antennae~~, the method comprising:

generating control signals to configure the base transceiver station to transmit selected data streams to a corresponding subscriber unit on an assigned channel of a multiple access protocol; and

~~transmitting, in response to the control signals and in a spatially separate fashion, the selected data streams on the assigned channel of the multiple access protocol; and~~

utilizing receiving one or more select data stream(s) associated with a communication channel from a remote transmitter at the mobile communication device through a plurality (N) of electric dipole antennae and a plurality (M) of magnetic dipole antennae, each of said antennae characterized by a distinct polarization with respect to another, said electric dipole antennae and magnetic dipole antennae co-located in a common antennae structure at the mobile communications device to provide at least N+M uncorrelated spatial streams of channel diversity of the received communication channel to a receiver within the mobile communications device with one another at the subscriber unit to receive the selected data streams.

2. (Original) The method of claim 1 wherein each electric dipole antennae has a different polarization.
3. (Original) The method of claim 1 wherein each magnetic dipole antenna has a different polarization.
4. (Original) The method of claim 1 wherein the electric dipole antennae comprise 3 electric dipole antennae and the magnetic dipole antennae comprise 3 magnetic dipole antennae.
5. (Original) The method of claim 4 wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations.
6. (Original) The method of claim 4 wherein the data streams are transmitted via a scattering channel.
7. (Original) The method of claim 1 wherein the subscriber unit comprises a palm sized device.
8. (Original) The method of claim 7 wherein the electric dipole antennae comprise 3 electric dipole antennae and the magnetic dipole antennae comprise 3 magnetic dipole antennae.
9. (Original) The method of claim 8 wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations.

10. (Original) The method of claim 9 wherein the data streams are transmitted via a scattering channel.

11. (Currently Amended) A method for transmitting data from a mobile communications device wirelessly receiving data at a base transceiver station from a subscriber unit, the base transceiver station comprising a plurality of antennae, the method comprising:

utilizing co-located transmitting data streams on an assigned channel of a multiple access protocol via select ones of a plurality (N) of electric dipole antennae co-located at the subscriber unit to transmit selected data streams on an assigned channel of a multiple access protocol mobile communication device as a single antenna structure, each antenna characterized by a distinct polarization with respect to any other to generate at least N uncorrelated spatial streams of channel diversity from the single antenna structure; and

generating control signals to configure the base transceiver station to receive the selected data streams from the subscriber unit on the assigned channel of a multiple access protocol; and  
receiving in response to the control signals the selected data streams on the assigned channel of the multiple access protocol.

12. (Withdrawn) The method of claim 1 wherein each electric dipole antennae has a different polarization.

13. (Currently Amended) The method of claim ~~42~~ 11 wherein the electric dipole antennae comprise 3 electric dipole antennae.

14. (Original) The method of claim 13 wherein the 3 electric dipole antennae have 3 different polarizations.
15. (Original) The method of claim 14 wherein the data streams are transmitted via a scattering channel.
16. (Currently Amended) The method of claim 11 wherein the ~~subscriber unit~~ mobile communications device comprises a palm sized device.
17. (Withdrawn) The method of claim 16 wherein the electric dipole antennae comprise 3 electric dipole antennae.
18. (Withdrawn) The method of claim 17 wherein the 3 electric dipole antennae have 3 different polarizations.
19. (Withdrawn) The method of claim 18 wherein the data streams are transmitted via a scattering channel.
20. (Currently Amended) A mobile communications device ~~system for wirelessly transmitting data between a base transceiver station and a subscriber unit, the base transceiver station comprising a plurality of transmit antennae, the system comprising:~~

means for generating control signals to configure the base transceiver station to transmit selected data streams to a corresponding subscriber unit on an assigned channel of a multiple access protocol;

~~means for transmitting in response to the control signals and in a spatially separate fashion, the selected data streams on the assigned channel of the multiple access protocol a transmitter, to prepare data for transmission; and~~

~~means for utilizing a plurality (N) of electric dipole antennae and a plurality (M) of magnetic dipole antennae co-located at the mobile communications device as a single antennae structure, responsive to the transmitter to effect transmission of the data through a wireless communication channel to a remote receiver, wherein each of the antennae has a distinct polarization with respect to any other antennae of the structure to generate at least N+M uncorrelated spatial streams composing the wireless communication channel said electric dipole antennae and magnetic dipole antennae co-located within a common antennae structure at the subscriber unit to receive the selected data streams.~~

21. (Withdrawn) The system of claim 20 wherein each electric dipole antennae has a different polarization.

22. (Withdrawn) The system of claim 20 wherein each magnetic dipole antenna has a different polarization.

23. (Currently Amended) The ~~system~~ device of claim 20 wherein the electric dipole antennae comprise 3 electric dipole antennae and the magnetic dipole antennae comprise 3 magnetic dipole antennae.
24. (Currently Amended) The ~~system~~ device of claim 23 wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations.
25. (Currently Amended) The ~~system~~ device of claim 24 wherein the data streams are transmitted via a scattering channel.
26. (Currently Amended) The ~~system~~ device of claim 20 wherein the ~~subscriber unit~~ device comprises a palm sized device.
27. (Currently Amended) The ~~system~~ device of claim 26 wherein the electric dipole antennae comprise 3 electric dipole antennae and the magnetic dipole antennae comprise 3 magnetic dipole antennae.
28. (Currently Amended) The ~~system~~ device of claim 27 wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations.

29. (Currently Amended) The system device of claim 28 wherein the data streams are transmitted via a scattering channel.

30. (Currently Amended) A mobile communications device system for wirelessly receiving data at a base transceiver station from a subscriber unit, the base transceiver station comprising a plurality of antennae, the system comprising:

means for utilizing co-located a plurality (N) of electric dipole antennae and a plurality (M) of magnetic dipole antennae, co-located at the subscriber unit communications device as a single antenna structure, responsive to a wireless communication channel wherein each of the plurality of antennae have a different polarization with respect to any other to produce at least N+M uncorrelated spatial streams from the received wireless communication channel to transmit selected data streams on an assigned channel of a multiple access protocol;

means for generating control signals to configure the base transceiver station to receive the selected data streams from the subscriber unit on the assigned channel of a multiple access protocol; and

means for receiving a receiver, selectively responsive to at least a subset of the plurality of antennae, to process the N+M uncorrelated spatial streams to recover data transmitted therethrough, in response to the control signals the selected data streams on the assigned channel of the multiple access protocol.

31. (Withdrawn) The system of claim 30 wherein each electric dipole antennae has a different polarization.

32. (Withdrawn) The system of claim 30 wherein the electric dipole antennae comprise 3 electric dipole antennae.
33. (Currently Amended) The ~~system~~ device of claim ~~32~~ 30 wherein ~~the~~ 3 electric dipole antennae have 3 different polarizations, and 3 magnetic dipole antennae have 3 different polarizations.
34. (Currently Amended) The ~~system~~ device of claim 33 wherein the data streams are transmitted via a scattering channel.
35. (Currently Amended) Wherein the ~~The system~~ device of claim 30 ~~wherein the subscriber unit~~ comprise a palm sized device.
36. (Withdrawn) The system of claim 35 wherein the electric dipole antennae comprise 3 electric dipole antennae.
37. (Withdrawn) The system of claim 36 wherein the 3 electric dipole antennae have 3 different polarizations.
38. (Withdrawn) The system of claim 37 wherein the data streams are transmitted via a scattering channel.



39. (Currently Amended) A method ~~for wireless transmitting data between a base transceiver station and a subscriber unit, the base transceiver station comprising a plurality of transmit antennae, the method comprising:~~

generating control signals to configure the base transceiver station to transmit selected data streams to a corresponding subscriber unit on an assigned channel of a multiple access protocol, wherein the assigned channel comprises a scattering channel; and

~~transmitting in response to the control signals and in a spatially separate fashion, the selected data streams on the assigned channel of the multiple access protocol; and~~

receiving a wireless communication channel at a mobile communications device utilizing six (6) co-located antennae at the subscriber unit device, to receive the selected data streams wherein the subscriber unit comprises a palm-sized device and wherein the 6 co-located antennae comprise 3 electric dipole antennae and 3 magnetic dipole antennae disposed on a single antennae structure, each antenna characterized by a distinct polarization with respect to any other antennae to generate 6 uncorrelated spatial streams from the received wireless communication channel wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations.

40. (Withdrawn) A method for wirelessly receiving data at a base transceiver station from a subscriber unit, the base transceiver station comprising a plurality of antennae, the method comprising:

utilizing 3 co-located antennae at the subscriber unit to transmit selected data streams on an assigned channel of a multiple access protocol, wherein the assigned channel comprises a scattering channel, wherein the subscriber unit comprises a palm-sized device and the 3 co-

located antennae comprise 3 electric dipole antennae, wherein the 3 electric dipole antennae have 3 different polarizations;

generating control signals to configure the base transceiver station to receive the selected data streams from the subscriber unit on the assigned channel of a multiple access protocol; and

receiving in response to the control signals the selected data streams on the assigned channel of the multiple access protocol.

41. (Withdrawn) A system for wirelessly transmitting data between a base transceiver station and a subscriber unit, the base transceiver station comprising a plurality of transmit antennae, the system comprising:

means for generating control signals to configure the base transceiver station to transmit selected data streams to a corresponding subscriber unit on an assigned channel of a multiple access protocol, wherein the assigned channel comprises a scattering channel;

means for transmitting in response to the control signals and in a spatially separate fashion, the selected data streams on the assigned channel of the multiple access protocol; and

means for utilizing 6 co-located antennae at the subscriber unit to receive the selected data streams wherein the subscriber unit comprises a palm-sized device and the 6 co-located antennae comprise 3 electric dipole antennae and 3 magnetic dipole antennae wherein the 3 electric dipole antennae have 3 different polarizations and the 3 magnetic dipole antennae have 3 different polarizations.

42. (Withdrawn) A system for wirelessly receiving data at a base transceiver station from a subscriber unit, the base transceiver station comprising a plurality of antennae, the system comprising:

means for utilizing 3 co-located antennae at the subscriber unit to transmit selected data streams on an assigned channel of a multiple access protocol, wherein the assigned channel comprises a scattering channel, wherein the subscriber unit comprises a palm-sized device and the 3 co-located antennae comprise 3 electric dipole antennae, wherein the 3 electric dipole antennae have 3 different polarizations; and

means for generating control signals to configure the base transceiver station to receive the selected data streams from the subscriber unit on the assigned channel of a multiple access protocol; and

and means for receiving in response to the control signals the selected data streams on the assigned channel of the multiple access protocol.

43. (Withdrawn) An apparatus comprising:

a receiver, to demodulate signals received via one or more wireless communication channels via an antenna structure; and

an antennae structure, couple with the receiver, to receive on or more wireless communication channels transmitted from a remote apparatus, the antennae structure including a plurality of electric dipole antennae and a plurality of magnetic dipole antenna, said electric dipole antennae and magnetic dipole antennae organized to form a single antenna structure.

44. (Withdrawn) An apparatus according to claim 43, the antennae structure comprising three electric dipole antennae and three magnetic dipole antennae, wherein each of the electric dipole antennae have different polarizations from one another and each of the magnetic dipole antennae have different polarizations from one another, all commonly configured within the single antenna structure.

45. (Withdrawn) Ana apparatus according to claim 43, further comprising a portable energy source, coupled to the receiver, to provide power to enable the receiver to operate.